

Curriculum Vitae

Basic Data

Name Daniel Martinec
Date of Birth March 2nd 1977
Nationality Czech
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Permanent residency Novoměstská 1236, 464 01 Frýdlant, Czech Republic
Affiliation Center for Machine Perception,
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Academic and Work Experience

- 24/04/2008 – 30/06/2008 Researcher at Center for Machine Perception, Faculty of Electrical Engineering, Czech Technical University.
- 01/01/2008 – 29/02/2008 Researcher at Feeling Software, Inc. Canada.
- 01/09/2004 – 31/12/2007 Researcher at Center for Machine Perception, Faculty of Electrical Engineering, Czech Technical University.
- 01/03/2001 – 31/08/2004 PhD studies — Faculty of Electrical Engineering, Czech Technical University, branch Artificial Intelligence and Biocybernetics. Thesis *Robust Multiview Reconstruction*.
- 03/09/1995 – 17/01/2001 Undergraduate studies at Faculty of Mathematics and Physics at Charles University, Prague, branch informatics, specialization computer graphics. Master thesis *Consistent reconstruction of a scene from many images*.
- 15/11/1999 – 28/02/2000 Programmer in company ICS Identifikační systémy, a.s. Control systems for the sensors of bar codes.
- 01/10/1998 – 30/06/1999 Teacher at the elementary school in Futurekids project in cooperation with Hořák Trading company. Intermittent instructing at a bee of programming at the basic school.

Academic Visits

- 15/01/2004 – 12/03/2004 Department of Numerical Analysis and Computing Science, Royal Institute of Technology (KTH), Stockholm, Sweden.
- 02/09/2002 – 28/09/2002 Institute for Computer Graphics and Vision, Technical University Graz, Austria.
- 28/02/2000 – 31/03/2000 Fuzzy Logic Laboratorium Linz-Hagenberg, Austria.

Scientific Knowledge and Abilities

- Good knowledge of some branches of computer vision, especially 3D multi-view geometry, robust estimation (RANSAC).
- Practical experience with some branches of mathematics: linear algebra, numerics of sparse matrices, model parameter estimation and optimization, bundle adjustment.
- Knowledge of branches close to computer graphics: realistic modeling of a scene by ray-tracing, radiance method (hierarchical approach), morphing, real-time walk through a 3D scene, animation.

- Basic knowledge of image processing and pattern recognition.
- Programming of translators of program languages, process control and file systems.
- Active interest in operating system Linux and its administration. Programming using X library.
- Programming languages: MATLAB, MAPLE, C/C++, (Object) Pascal, M-technology (original name MUMPS), Visual Basic, Prolog, Assembler, \LaTeX (\TeX), script language Bash, Lisp, SQL, Oracle, HTML.
- Languages: good English, intermediate German, basic Polish, basic Russian, poor French.

Selected Publications in Order of Importance

1. D. Martinec. *Robust Multiview Reconstruction*. PhD Thesis CTU–CMP–2008–01, Center for Machine Perception, K13133 FEE Czech Technical University, Prague, Czech Republic, June 2008.
2. T. Svoboda, D. Martinec, and T. Pajdla. A convenient multi-camera self-calibration for virtual environments. *PRESENCE: Teleoperators and Virtual Environments*, 14(4):407–422, August 2005.
3. D. Martinec, J. Matas, M. Perđoch, O. Chum, Š. Obdržálek, T. Pajdla, and T. Werner. The second place in iccv2005 computer vision contest, Beijing, China, October 2005.
4. D. Martinec and T. Pajdla. Robust rotation and translation estimation. In *Proceedings of the Computer Vision and Pattern Recognition conference (CVPR)*, Minneapolis, Minnesota, USA, June 2007. CD-ROM.
5. D. Martinec and T. Pajdla. 3D reconstruction by fitting low-rank matrices with missing data. In *Proceedings of the Computer Vision and Pattern Recognition conference (CVPR)*, vol. I, pp. 198–205, San Diego, CA, USA, June 2005.
6. D. Martinec and T. Pajdla. Structure from many perspective images with occlusions. In *Proc. of the European Conference on Computer Vision (ECCV)*, vol. II, pp. 355–369, Copenhagen, Denmark, May 2002.
7. D. Martinec and T. Pajdla. Line reconstruction from many perspective images by factorization. In *Proceedings of the Computer Vision and Pattern Recognition conference (CVPR)*, vol. I, pp. 497–502, Madison, Wisconsin, USA, June 2003.
8. D. Martinec and T. Pajdla. 3D reconstruction by gluing pair-wise Euclidean reconstructions, or “how to achieve a good reconstruction from bad images”. In *Third International Symposium on 3D Data Processing, Visualization and Transmission (3DPVT)*, University of North Carolina, Chapel Hill, USA, June 2006. CD-ROM.
9. B. Mičušík, D. Martinec, and T. Pajdla. 3d metric reconstruction from uncalibrated omnidirectional images. In *Proc. of the Asian Conference on Computer Vision (ACCV)*, vol. 1, pp. 545–550, Jeju Island, Korea, January 2004.
10. H. Cornelius, R. Šára, D. Martinec, T. Pajdla, O. Chum, and J. Matas. Towards complete free-form reconstruction of complex 3D scenes from an unordered set of uncalibrated images. In *Proc ECCV Workshop Statistical Methods in Video Processing*, vol. LNCS 3247, pp. 1–12, Prague, Czech Republic, May 2004.
11. G. Kamberov, G. Kamberova, O. Chum, Š. Obdržálek, D. Martinec, J. Kostková, T. Pajdla, J. Matas, and R. Šára. 3D geometry from uncalibrated images. In *ISVC '06: Proceedings 2nd International Symposium on Visual Computing*, number 4292 in Lecture Notes in Computer Science, pp. 802–813, Lake Tahoe, USA, November 2006.
12. D. Martinec and T. Pajdla. Consistent multi-view reconstruction from epipolar geometries with outliers. In *Proceedings of the 13th Scandinavian Conference on Image Analysis (SCIA)*, pp. 493–500, Göteborg, Sweden, June 2003.
13. D. Martinec and T. Pajdla. Outlier detection for factorization-based reconstruction from perspective images with occlusions. In *Proceedings of the Photogrammetric Computer Vision (PCV)*, vol. B, pp. 161–164, Graz, Austria, September 2002.

14. D. Martinec. Consistent reconstruction of a scene from many images. Master's thesis, Faculty of Mathematics and Physics at Charles University in Prague, Department of Software Engineering, Malostranské nám. 25, 11800 Praha 1, Czech Republic, 2000. In Czech.

Invited Talks

1. Computational Perception, Joanneum Research - Institute of Digital Image Processing, Graz, Austria, September 2002.
2. Institute for Computer Graphics and Vision, Institute for Computer Graphics and Vision, Technical University Graz, Graz, Austria, September 2002.
3. Computer Vision Laboratory, Computer Vision Laboratory, University of Ljubljana, Ljubljana, Slovenia, December 2002.
4. Department of Computer Science, Columbia University, New York, June 2003.
5. Department of Electrical and Computer Engineering, College of Engineering, The University of Iowa, Iowa City, Iowa, June 2003.
6. Department of Numerical Analysis and Computing Science, Royal Institute of Technology (KTH), Stockholm, Sweden, January 2004.
7. Forschungsinstitut für Optronik und Mustererkennung, FGAN Research Institute for Optronics and Pattern Recognition (FGAN-FOM), Ettlingen, Germany, October 2006.
8. School of Computer Science, McGill University, Montreal, Canada, March 2008.